

1-18. Cancelled

19. (Previously Presented) A method for discriminating between species of *Shigella* and *E. coli* or for discriminating among species of *Shigella* and *E. coli* in a sample containing organisms of one or more taxonomic groups comprising:

- a. selecting an oligonucleotide having a sequence from a DNA or RNA operon, wherein the sequence differs by one or more bases from at least one of the operons from the two or more species being discriminated, and wherein the oligonucleotide discriminates between species after hybridization by the use of two or more wash temperatures, at least one of which is above the oligonucleotide's calculated T_m ;
- b. hybridizing the oligonucleotide to nucleic acid from the sample;
- c. exposing the hybridized oligonucleotide to two or more wash temperatures, at least one of which is above the oligonucleotide's calculated T_m ; and
- d. determining the presence or absence of hybridized nucleic acid.

20. (Previously Presented) The method of claim 19, wherein an oligonucleotide comprising SEQ ID NO: 1 is used to discriminate between or among *Shigella* and *Escherichia*.

21. (Previously Presented) The method of claim 19, wherein an oligonucleotide comprising SEQ ID NO: 2 is used to discriminate between or among *Shigella* and *Escherichia*.

22. (Previously Presented) The method of claim 19, wherein an oligonucleotide comprising SEQ ID NO: 3 is used to discriminate between or among *Shigella* and *Escherichia*.

23. (Previously Presented) The method of claim 19, wherein an oligonucleotide comprising SEQ ID NO: 4 is used to discriminate between or among *Shigella* and *Escherichia*.

24. (Previously Presented) The method of claim 19, wherein an oligonucleotide of RNA is used, wherein the oligonucleotide sequence comprises a sequence selected from the group consisting of SEQ. ID. Nos.: 1, 2, 3 and 4, and wherein U substitutes for T.

25. (Previously Presented) A nucleic acid probe comprising the sequence of SEQ ID NO: 2 or 3, which distinguishes between species of *Shigella* in a hybridization assay, or distinguishes between *Shigella* and *E. coli* in a hybridization assay.

26. (Previously Presented) A method for discriminating between species of *Shigella* and *E. coli* or for discriminating among species of *Shigella* and *E. coli* in a sample containing organisms of one or more taxonomic groups comprising:

- a. selecting an oligonucleotide having a sequence from a DNA or RNA operon, wherein the sequence differs by one or more bases from at least one of the operons from the two or more species being discriminated, and wherein the oligonucleotide discriminates between species after hybridization by the use of two or more wash temperatures at or above the oligonucleotide's calculated T_m or at the experimentally determined T_m ;
- b. hybridizing the oligonucleotide to nucleic acid from the sample;
- c. exposing the hybridized oligonucleotide to two or more wash temperatures at or above the oligonucleotide's calculated T_m or at the experimentally determined T_m ; and
- d. determining the presence or absence of hybridizing nucleic acid,

wherein said oligonucleotide consists of the sequence of SEQ ID NO: 4 or wherein said oligonucleotide comprises a sequence selected from the group consisting of SEQ ID NO: 1, SEQ ID NO: 2 and SEQ ID NO: 3.

27. (Original) The method of claim 26, wherein an oligonucleotide consisting of SEQ ID NO: 1 is used to discriminate between or among *Shigella* and *Escherichia*.

28. (Previously Presented) The method of claim 48, wherein a nucleic acid probe consisting of SEQ ID NO: 2 is used to discriminate between or among *Shigella* and *Escherichia*.

29. (Previously Presented) The method of claim 48, wherein a nucleic acid probe consisting of SEQ ID NO: 3 is used to discriminate between or among *Shigella* and *Escherichia*.

30. (Original) The method of claim 26, wherein an oligonucleotide consisting of SEQ ID NO: 4 is used to discriminate between or among *Shigella* and *Escherichia*.

31. (Original) The method of claim 26, wherein an oligonucleotide of RNA is used, wherein the oligonucleotide sequence consists of a sequence selected from the group consisting of SEQ ID NOs: 1, 2, 3 or 4, and wherein U substitutes for T.

32. (Original) The method of claim 19, wherein an oligonucleotide consisting of SEQ ID NO: 1 is used to discriminate between or among *Shigella* and *Escherichia*.

33. (Original) The method of claim 19, wherein an oligonucleotide consisting of SEQ ID NO: 2 is used to discriminate between or among *Shigella* and *Escherichia*.

34. (Original) The method of claim 19, wherein an oligonucleotide consisting of SEQ ID NO: 3 is used to discriminate between or among *Shigella* and *Escherichia*.

35. (Original) The method of claim 19, wherein an oligonucleotide consisting of SEQ ID NO: 4 is used to discriminate between or among *Shigella* and *Escherichia*.

36. (Cancelled)

37. (Previously Presented) A nucleic acid probe which consists of the sequence of SEQ ID NO: 1 which distinguishes between species of *Shigella* in a hybridization assay, or distinguishes between *Shigella* and *E. coli* in a hybridization assay.

38. (Previously Presented) The nucleic acid probe of claim 25, which comprises the sequence of SEQ ID NO: 2.

39. (Original) The nucleic acid probe of claim 25, which consists of the sequence of SEQ ID NO: 2.

40. (Previously Presented) The nucleic acid probe of claim 25, which comprises the sequence of SEQ ID NO: 3.

41. (Original) The nucleic acid probe of claim 25, which consists of the sequence of SEQ ID NO: 3.

42. (Previously Presented) A kit, comprising 3 probes, which are a probe which comprises the sequence of SEQ ID NO: 1, a probe which comprises the sequence of SEQ ID NO: 2, and a probe which comprises the sequence of SEQ ID NO: 3.

43. (Original) A kit, comprising 3 probes, which are a probe which consists of the sequence of SEQ ID NO: 1, a probe which consists of the sequence of SEQ ID NO: 2, and a probe which consists of the sequence of SEQ ID NO: 3.

44. (Previously Presented) The kit of claim 42, further comprising a probe which comprises the sequence of SEQ ID NO: 4.

45. (Previously Presented) The kit of claim 43, further comprising a probe which comprises the sequence of SEQ ID NO: 4.

46. (Currently Amended) A method as in claim 19 wherein the ~~hybridized~~ oligonucleotide is hybridized to nucleic acid within the sample and the sample is separated into at least two portions and each portion contains nucleic acid from the hybridized oligonucleotide and is exposed to a different wash temperature, at least one of which is above the oligonucleotide's calculated T_m .

47. (Currently Amended) A method as in claim 26 wherein the hybridized oligonucleotide is hybridized to nucleic acid within the sample and the sample is separated into at least two portions and each portion contains nucleic acid from the hybridized oligonucleotide and is exposed to a different wash temperature, at least one of which is above the oligonucleotide's calculated T_m .

48. (Currently Amended) A method of using a nucleic acid probe of claim 25 to discriminate between Shigella and E. coli or among species of Shigella and E. coli in a sample which comprises the step of hybridizing said nucleic acid probe to nucleic acid in the sample.

49. (Currently Amended) A method of using a kit of claim 43 to discriminate between Shigella and E. coli or among species of Shigella and E. coli in a sample which comprises the step of hybridizing the probes of said kit to nucleic acid in the sample--